FIG.1

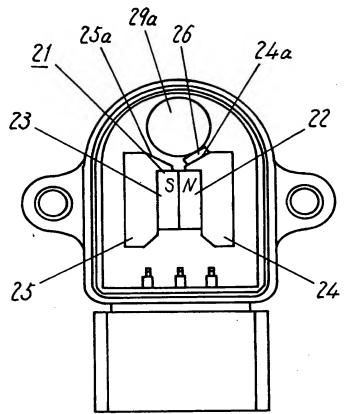


FIG.2

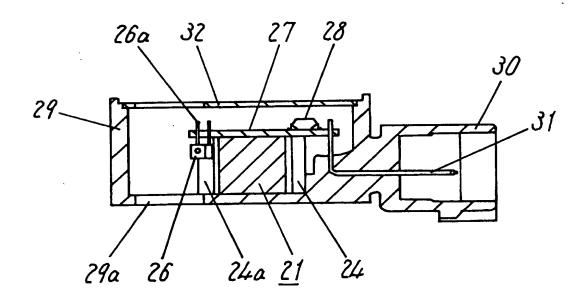
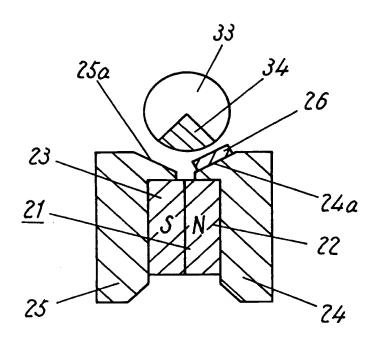


FIG.3



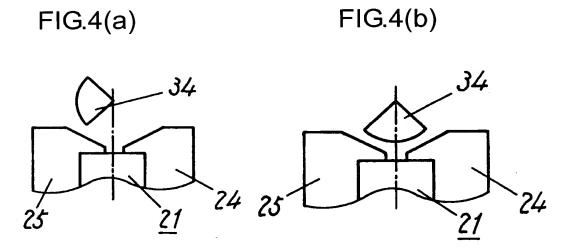


FIG.5

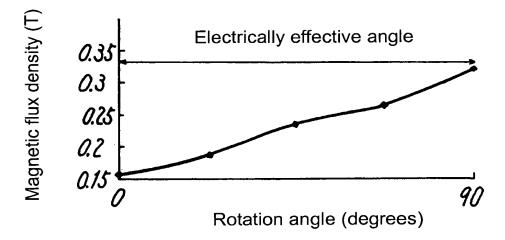


FIG.6

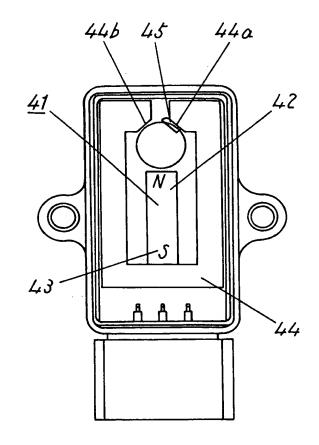


FIG.7

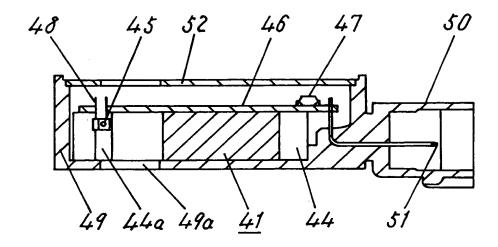
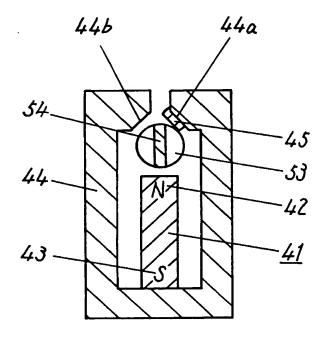
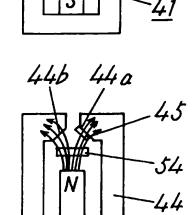


FIG.8







44a

54

-44

FIG.9(b)

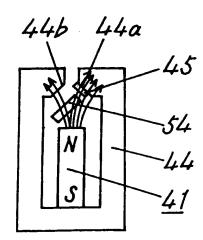


FIG.9(c)

FIG.10

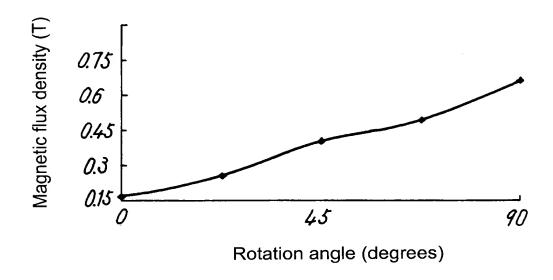


FIG.11

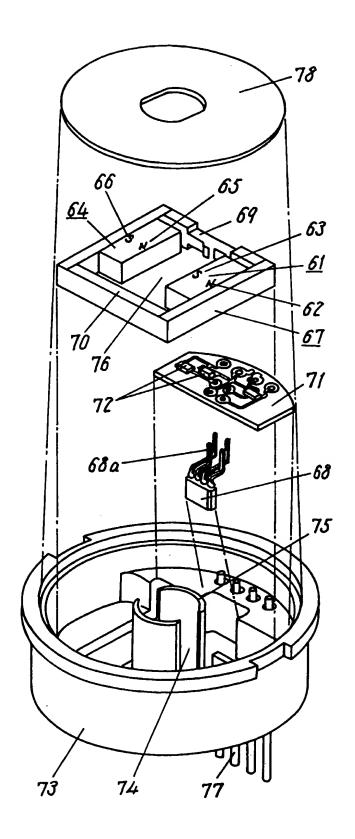


FIG.12

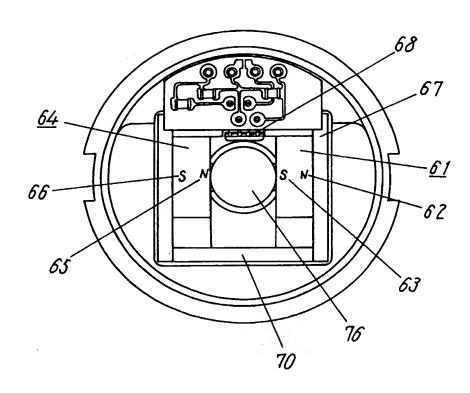


FIG.13

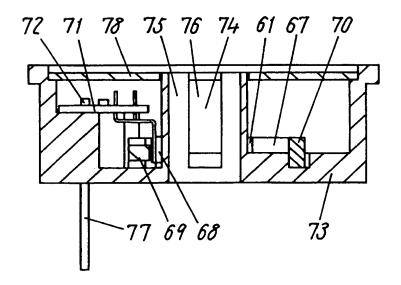
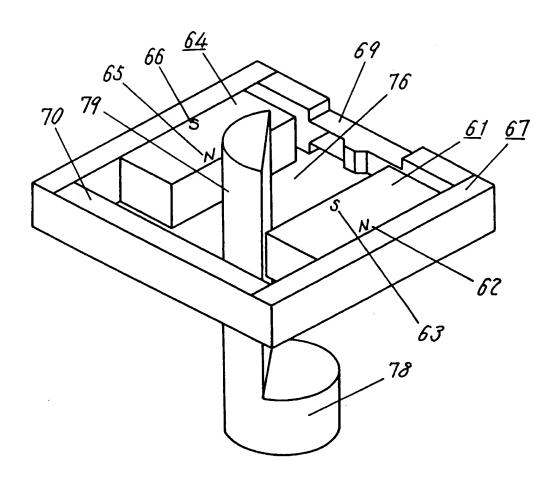


FIG.14



The state of the s

FIG.15 (a) FIG.15 (b) FIG.15 (c)

Wagnetic flux density (m) 30 -30 -60 0 -80 Rotation angle (degrees)

**FIG.16** 

FIG.17

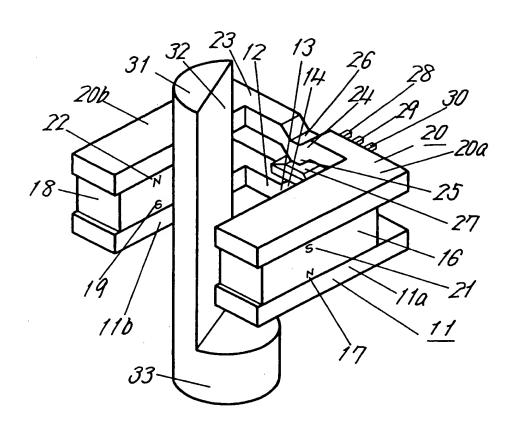
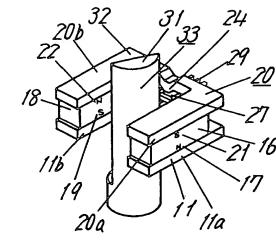
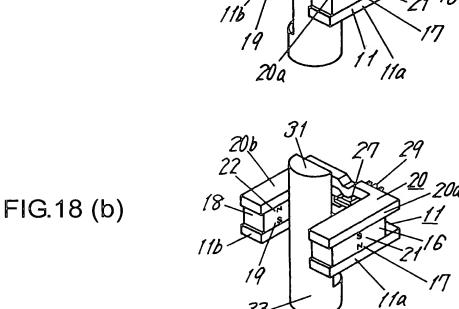




FIG.18 (a)

353





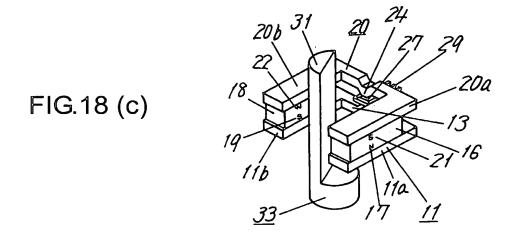


FIG.19

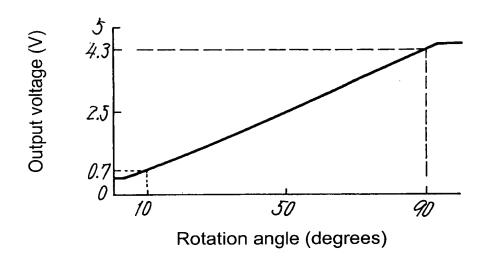


FIG.20

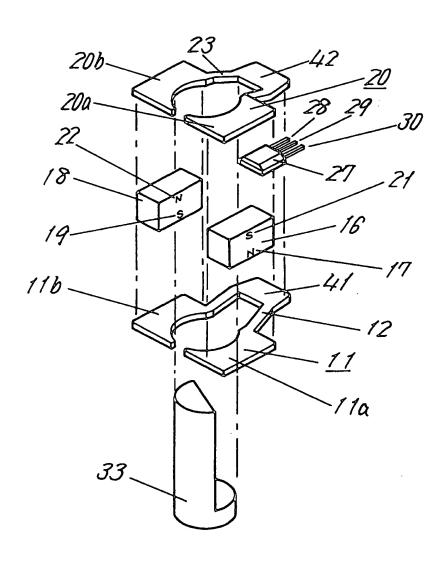


FIG.21

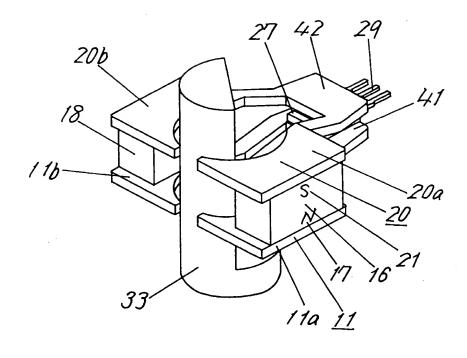


FIG.22

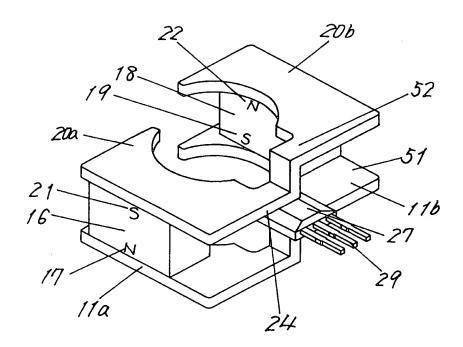


FIG.23

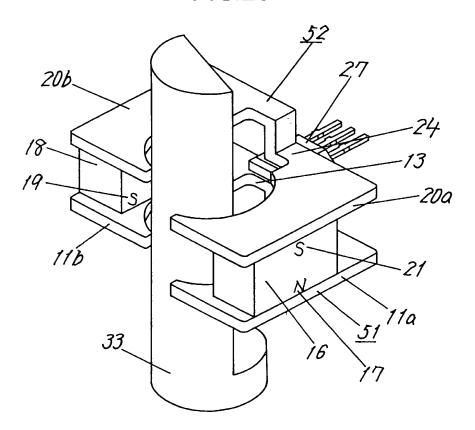


FIG.24

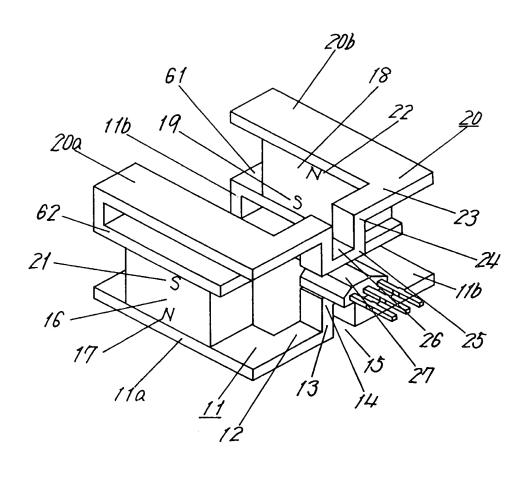
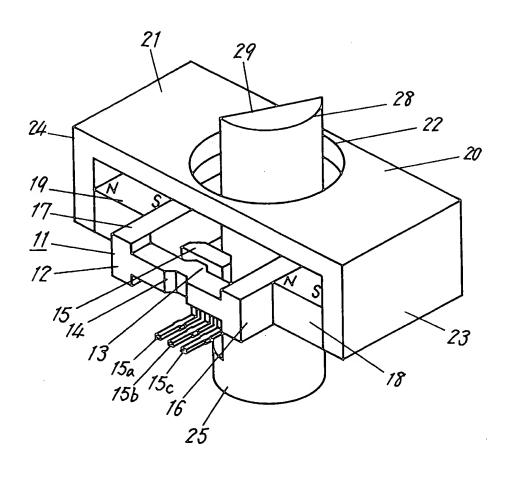
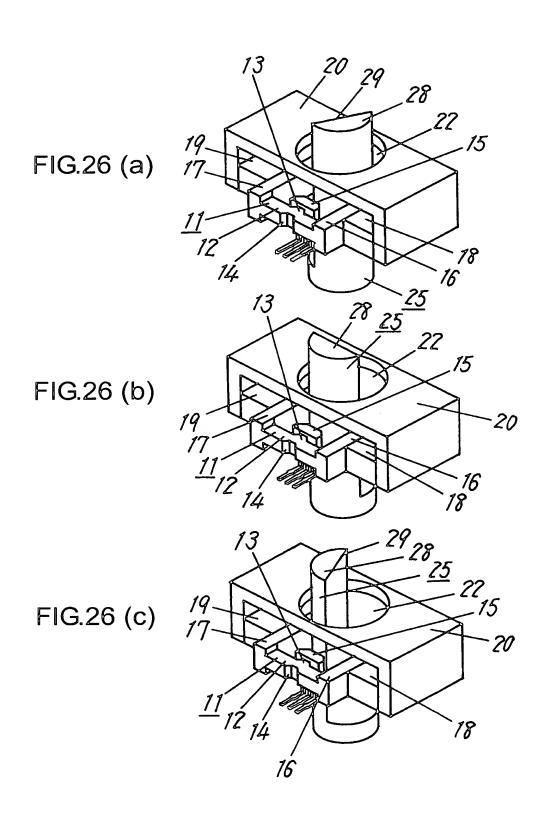




FIG.25







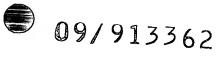


FIG.27

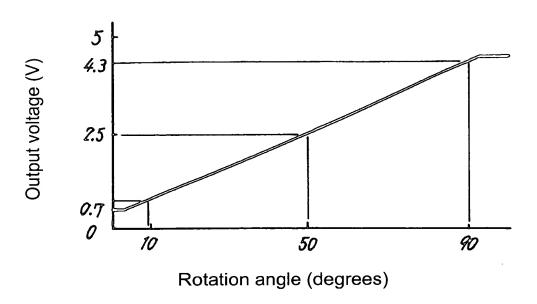
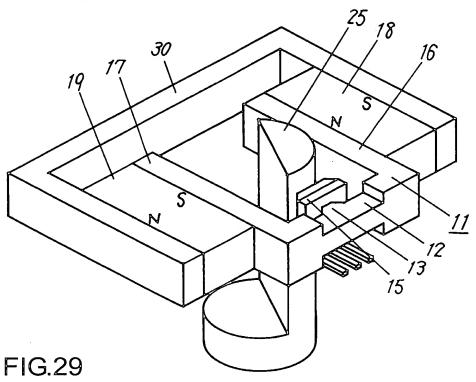
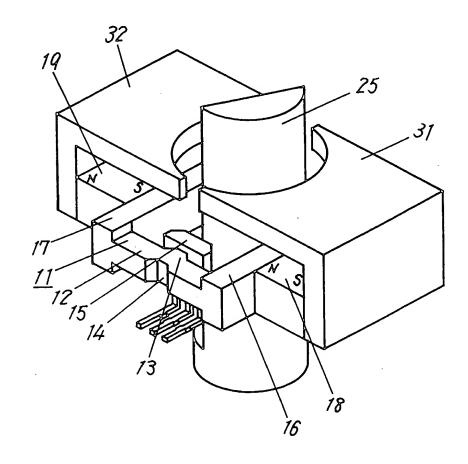




FIG.28





## FIG.30

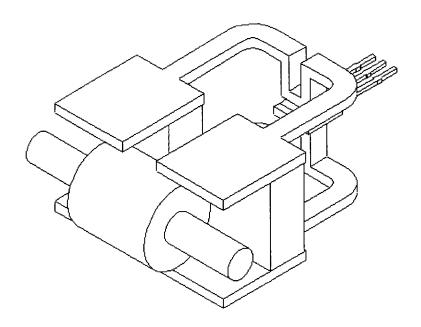
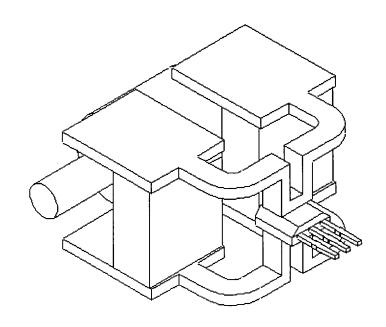


FIG.31





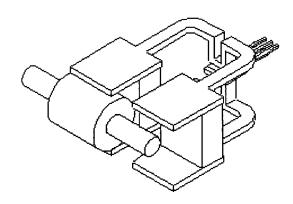


FIG.32 (b)

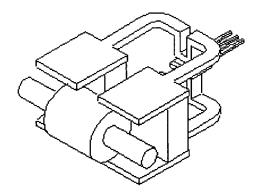


FIG.32 (c)

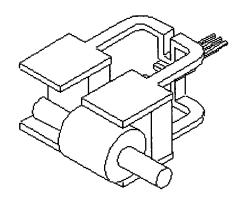
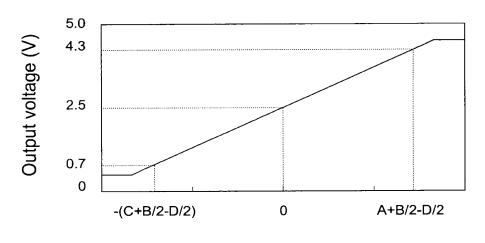


FIG.33



Position (mm)



FIG.34

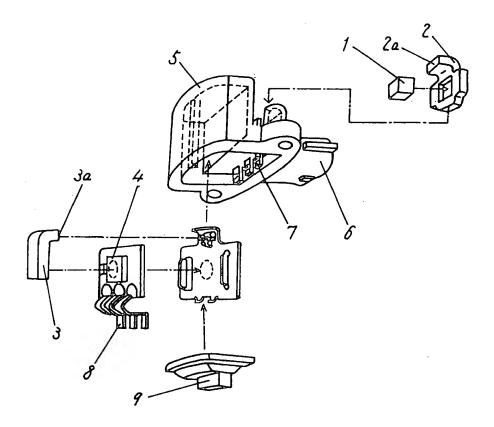


FIG.35

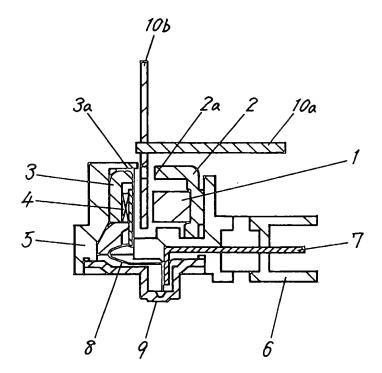




FIG.36 (a)

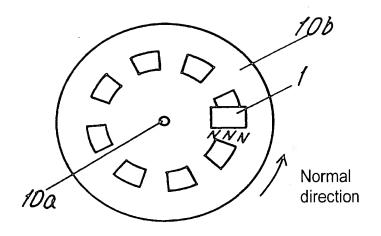
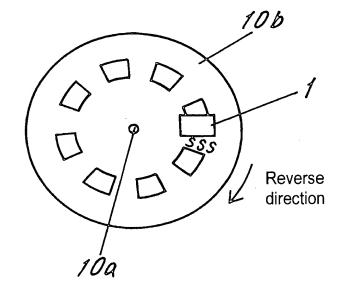


FIG.36 (b)



## Reference numerals

21,41 magnet

22,42,62,65 N-pole

23,43,63,66 S-pole

24,25,44,67 magnetic body

24a,25a,44a,44b tip end

26,45,68 magnetic sensor element

33,53 rotary shaft

34 sector portion

54 I-shaped portion

61 first magnet

64 second magnet

69 intermediate portion

70 reinforcing magnetic body

76 space

111,151 first magnetic body

111a,120a one-side arm

111b,120b another-side arm

112,123 intermediate portion

113,141 first magnetic-detecting portion

114 first projecting portion

115,126 space

116 first magnet

117,122 N-pole

118 second magnet

119,121 S-pole

120,152 second magnetic body

124,142 second magnetic-detecting portion

125 second projecting portion

127 magnetic sensor element

133 object

161,162 magnet supporting member

211 first magnetic body

212 sensor element supporting portion

213 projecting portion

214 recessed portion

215 magnetic sensor element

216 first magnet supporting portion

217 second magnet supporting portion

218 first magnet

219 second magnet



- 220 reinforcing magnetic body
- 222 aperture
- 225 object

di

- 231 second magnetic body
- 232 third magnetic body
- 311 first magnetic body
- 311a,320a one-side arm
- 311b,320b another side arm
- 312,323 intermediate portion
- 313 first magnetic-detecting portion
- 314 first projecting portion
- 315,326 recessed portion
- 316 first magnet
- 317,322 N-pole
- 318 second magnet
- 319,321 S-pole
- 320 second magnetic body
- 324 second magnetic detecting portion
- 325 second projecting portion
- 327 magnetic sensor element
- 331 object
- 332 detective section